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Journal Jottings

One of the satisfactions of life is meeting people who obviously enjoy what they are doing either as a profession, as a way of life, or as a pastime. You can tell by the intonation in their voices as they discuss their endeavours; you can tell by facial expressions — not necessarily the smile, rather the eyes; you can tell by the desire to share with you their interest. Their enthusiasm is usually contagious, and I hope that in this instance we have "caught it" in the final version of the interview with Richard Saul entitled 'Establishing an Orchard.' If we have not, then we have done

Richard an injustice because he is enthused about his work, enthused but not oblivious to the fact that starting an orchard from scratch is a long-term project, that there is a lot of hard work, knowledge, and more than a little bit of luck required to make it a success.

We continue with trees as the theme for the other two articles in the issue. They, too, make for good reading. Have you ever given a thought to tapping birch trees? It's being done. What's the future of the private woodlot? We present one viewpoint.

Along with being Business Manager, Martin van Lierop,

Director of the Extension Department, becomes, with this issue, the Editor. His editorial comments on page two, as well as those in future Journals, will, I'm sure, be followed with interest.

Hazel M. Clarke

It is the responsibility of our government to introduce policies so that our agricultural industry will perform to set objectives. Very often these policies will have a direct economic and social impact on the agricultural producer.

Experience has proven that the full dimension of a policy may not be clear to all the producers at the time it is studied and introduced. Only after its implementation is it realized that in practice, at the farm level, a policy may lack the flexibility to be fully integrated in a farm operation. Too often in the past, policies were introduced without input or consultation with the producers. This resulted in a conflict in the production aspect with serious economic consequences to the producer. The changes or lack of changes in the dairy policy, in retrospect, illustrates this point.

The construction of a relevant policy requires an interaction and dialogue between government, agri-business, and the farmer. The complexity of our system makes it difficult and sometimes impossible for a farmer to be informed about individual aspects within a policy while it is being drafted. Unfortunately, too many of us fail to realize that mechanics exist for an individual producer to participate and contribute to the components within a policy before it is finalized.

How is it possible to participate? The most effective force behind policy change or amendments is group action. Farm organizations exist for this purpose. Their role is to inform farmers about the stand government exercises on specific issues in agriculture. Simply being informed on an issue does not eliminate possibilities of controversy. Therefore, the role of farm organizations is extended further to give individuals a medium for making the government aware of popular opinions.

Farmers do not always appreciate the potential and strength of this process which is at their disposal. This process, generally known as "lobbying" or more technically as "legislative engineering" provides the opportunity for amending policies in the drafting process. In many instances this responsibility is left to farm organizations or interest groups formed around a specific issue. To make this process functional to its fullest extent in the interest of the farmer, his participation is essential while the policy is being drafted. Too often apathy forces a small minority to take decisions, causing polarization of two camps but, unfortunately, after the fact. These unnecessary conflicts do nothing to solve the problems, and overlook the essence of the points in question.

New policies and changes in old policies will continue at an increasing rate during the new year, some of which will effect the livelihood of farmers. An individual can be part of these changes by realizing his **involvement** and **participation** are essential for the farm community to continue to be a dynamic part of this society. If one opts for non-participation and remains an arm-chair critic, one can only blame oneself for a final decision that under different circumstances could have been more advantageous for one's needs and aspirations. It is not always easy to go to meetings or to keep up-to-date on all agricultural issues. But by staying at home or not participating, thereby not taking advantage of our rights as individuals to express our opinion, we might awaken to changes that are not coherent with our beliefs. There is no doubt that 1977 will continue to bring its share of challenges and problems, but most of these will look much better if you as an individual have participated in the collective process.

It is my contention that the urgency for this process of frank dialogue between the farmer, agri-business, and governments cannot be stressed enough so that the agricultural industry will escape the conflicts and build together for the future.

Martin van Lierop

Establishing an Orchard

Richard Saul graduated from the diploma program in 1975. Since that time he has been employed as a technician for an orchard, Berger Valmont, in Dunham. He is responsible for instituting a replanting program. There are 10,000 standard trees in the orchard and the plan over a five-year period is to replant a good portion of the orchard with dwarf and semi-dwarf trees. Mr. Saul is in charge of the nursery which supplies the stock and of planting and caring for the young trees. This past fall he also taught a successful evening course, "Establishing and Operating a Small Apple Orchard" at Macdonald College. Joan Habel and Hazel Clarke interviewed him recently and our questions appear in italics.

apart from other considerations, is it worth being in apples?

can give some average figures. Depending upon the management used, it costs about \$2.25 to put up a bushel of apples, including labour and materials. This includes fixed costs such as spraying, bringing in bees, pruning and the variable cost of picking — it is going to vary directly to the amount of crop. But \$2.25 is pretty average.

The return per bushel can range from \$2 to \$4. Taking an average of \$3 per bushel, 500 bushels per acre would return \$375. It can vary and money can be lost some years, especially if the owner does not run the operation. Paying another person to run the orchard can, in some years, eat up most of the profit. If a person plans to do his own work, apart from the fun of it, he can make a living if he has say 20 acres per one man of standard size



trees. He will never be rich, but he can make a living.

Could you discuss location?

As far as markets are concerned, the varieties that we have success with in Quebec are not suitable, for the most part, for export outside the province. They are too tender. A general rule of thumb is the later the variety, the hardier it is. Cortlands are about our latest variety. Another factor to consider is that you should be located close to storage facilities. If you are on or near a main highway, you may want to consider a "pick your own" type of operation.

You are probably better off in an area that is already producing apples for the simple reason that the geographical location has already been proven. Hilly areas are best with the orchard situated on either a hill or sloping land so that the cold air can drain down; you don't want your trees in the bottom of a valley! If you can

locate near a large body of water so much the better because water tends to moderate the temperature, and this will have some effect on the orchard. Remember, too, if you are in an area with other orchards, then the supplies of pesticides and fungicides, etc., that you need should be readily accessible.

Should the slope have any special exposure?

Personally, I don't think it makes too much difference. Some people say northern because they are afraid of the southwest disease — winterkill — because the sun is in the southern sky. On the other hand, you get more heat in the summer time on a southern slope.

What about soil?

Drainage is probably the most important thing. The land should be well drained. Some roots work differently than others. For example, an EM 7 has a tap

root; now if you have a clay pan a couple of feet down, the tap root is going to hit it and be effected. The drainage even on other root stocks is also important. If the soil is not well drained, then it should be tile drained before you plant. There is one root stock, the M 13, that is tolerant to wet soils — if you have this problem and there is nothing you can do about it, you could use that root stock, but this doesn't mean that it wouldn't do better if you had well-drained soil.

The pH in the soil should be 6 to 6.5; below that some important minerals will not be as readily absorbed or made as readily available to the roots.

How much land is needed?

You can plant 50 standard-size trees to the acre, spacing them 30 by 30 feet or, if you want to go very intensive, you can use dwarf root stocks with not too vigorous scion wood and, spacing them 6 by 12, have 600 trees. You would probably want 20 acres of large trees with a yield of 500 to 700 bushels per acre. The yield from dwarf trees would be about 1,000 to 1,200 bushels per acre — one man might be able to manage 10 acres (6,000 dwarf trees), but I think he would find it a bit much.

Let's discuss types — standard, dwarf?

Compared to a standard tree, there are only a couple of spur types. A spur is a mutation and has different growing characteristics. It will produce a lot more fruit spurs, thus giving much more product per branch than from a standard tree. It is also more dwarfing.

There are two things that give a tree dwarfing characteristics: the variety and the root stock. You can have root stocks that are quite dwarfing such as East Malling 9 or 26 but if you put them with vigorous varieties such as

Cortland or Jerseymac, you are going to get larger trees than you anticipated. Simply using a 9 root stock will not automatically mean the tree will be a dwarf. Also if you don't prune properly, the tree will keep on growing. Granted it will grow a lot less than a standard tree given the same treatment. The amount of dwarfing also depends on the soil. If you put the tree in a rich soil, it is going to be more vigorous. If you give it a lot of nitrogen fertilizer, it is going to be more vigorous. There are many factors to take into account.

Where can you get trees?

There are two sources. You can buy them or have your own nursery. It costs anywhere from \$2 to \$3 for a one-year old whip which would be from three to six feet tall and from $\frac{3}{8}$ up to $\frac{1}{2}$ inch or more in diameter. There are a lot of reputable nurseries, for example in Quebec — Ertele Gagnon in Compton and D. Savio in St. Jean Baptiste — and there are some in Ontario and New York state that are convenient.

Some people are keen on having their own nurseries. If so, you do the budding yourself and only have to buy the root stocks which can cost from 35 to 50 cents apiece. The scion wood can often be obtained free from a research station, such as the one in Frelighsburg. If you want a special type of patented budwood, this can be more difficult. You usually have to go directly to whoever has the patent.

The scion is the variety you want to grow — McIntosh, Cortland, etc. You graft or bud the scion onto the root stock and the root stock gives you the dwarfing characteristics, either early or late fruiting, tolerance to wet feet, and so on. Each root stock has its own advantages and disadvantages.

Do you recommend buying the tree or the root stocks?

Starting a nursery takes a fair amount of time. It may seem at first that spending 50 cents as opposed to \$3 would be a lot more advantageous, but there is a lot of care and good management that has to go into a nursery. If the product that you are putting into the ground is not exactly right you may suffer for it in years to come. And if you already have an orchard, it is giving you a return. A nursery isn't. If you can operate 10 acres without a nursery, possibly you can only operate seven acres with one. Therefore you only have seven acres of crop and you are losing part of the savings that you think you are getting. It is enjoyable if you like doing it and it can be profitable if you have a large family and thus manpower.

What about varieties?

Early season varieties cannot be stored so the marketing is different. There has been a trend to try and get away from McIntosh as people seem to be getting tired of them. Orchardists are trying to go with other varieties — Spartan, Empire, Jerseymac. You have to have at least two varieties for pollination, and you have to make sure of two things. One, that the trees are going to grow to be around the same size because they are planted at the same density, and, two, that their flowering will occur at approximately the same time. We used to use McIntosh with Cortland as pollinators. McIntosh is relatively early in flowering and Cortland is late. They may overlap for only a day or so which means the bees have to work quickly. What people are trying now is to put in Macspur with Paulared which, on the same root stock, should grow to the same size, but they overlap a lot more as far as their flowering dates so you get better pollination. It doesn't necessarily mean that because a tree matures late it

VARIETY POLLINATED

Quintile	Early Bloom	Midseason Bloom	Late Bloom
1	✓		
2	✓		
3	✓		
4	✓		
5	✓		
6	✓		
7	✓		
8	✓		
9	✓		
10	✓		
11	✓		
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15	✓		
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95	✓		
96	✓		
97	✓		
98	✓		
99	✓		
100	✓		

Tydemans Red
 Paulared
 Masspur
 Rogers Red McIntosh
 Imperial Red McIntosh
 Red Wealthy
 Idared
 Spartan
 Lodi
 Beacon
 Red Gravenstein
 N.J. # 35
 Julyred
 Jersey mac
 R.I. Greening
 Puritan
 Cortland
 Empire
 Viking
 Turley Winsap
 Double Red Staygreen
 Red Winsap
 Winespur
 Regent
 Red Baron
 Red Haralson
 Red Prince Del.
 Imperial Red Del.
 Redchid Del.
 Sturdeespur (Miller)
 Holly
 Prima
 Jonree
 Dbl Red Jonathan
 Anderson Jonathan
 Honeygold
 Melrose
 Smoothie
 Golden Del.
 Sundale Spur Gold Del.
 Mutsu
 Connell Red
 Macoun
 N.W. Greening
 Red York
 Northern Spy
 Spure Rome
 Gallia Beauty
 Willis Wms. E. Red

Richard Saul finds some of the information in the above table from Hilltop Nurseries in Hartford, Michigan, of benefit for Quebec pollination.

Legend

can be relied upon to pollinate this variety

partially self fruitful but should not
be planted in a solid block

should not be relied upon as the only pollinizer for this variety.

going to flower late. You have to pay attention to each flowering date and treat it separately.

What are the steps involved in spring planting?

When you receive your stock, finances are you won't be able to plant it right away. It may be raining, too early to get the tractor out, or the land may not be disced. You have to make certain that the stock is well cared for, and,

DIRECTIONS FOR USE: For each pair of varieties, make two cross readings; one for each variety, starting from the pollen source (left side) on the chart to the other variety at the top of the chart.

1. If both readings shows white squares, you can plant the varieties together in a two variety planting.
2. If both readings show dark or partially dark squares, you should not depend on them to pollinate one another.

above all, you don't want the trees to break dormancy. The best thing to do is to heel them in. Dig a trench on the north side of a building where there is either no sunlight or a minimum of sunlight, put the roots in on an angle and cover them over so they will be well insulated from the cold. If the ground is still frozen, then they should be kept in damp sand, peat moss, or sawdust. Not so damp that when you squeeze it water runs out

3. If one reading shows a white square and the other a dark one, they should not be planted together in a two variety planting. If you wish to plant them together, choose a third variety as a pollen source that gives a white/ square reading with the variety that gave a white square reading in the original combination.

Example: Winesap and Golden Delicious.
Winesap as a pollen source for Golden
Delicious — dark square. Golden
Delicious as a pollen source for Winesap
— white square. Third variety possibility:
Jonathan as a pollen source for Golden
Delicious — white square.

because you may then get fungus. They should be kept around 34 to 38 degrees F. with 90 per cent humidity. A damp, cold cellar will do, but if it goes up to 45 degrees F., the trees should only be left there for a couple of days.

Planting time is as soon as you can get on the field, which should have been ploughed the fall before and disced in the

spring. The previous fall was also the time to consider and apply your fertilizer requirements, especially phosphorus which is not very mobile so you want to get it down a little because you will never get another chance to plough the field.

If it is an old orchard, you should wait two years before planting again. Put in buckwheat the first year and corn the second. You can get by with just one year but the longer you wait the better. One reason is nematodes. They can be a real problem and can reduce yield. You can see that the trees are really stunted and not producing and you are not sure why. The soil fertility is high, the drainage is good, the site location seems to be ideal, and yet they are not doing well. The best thing to do is to see your agronomist if this happens.

You wait two years and with each ploughing you get a lot of old roots. You will have to get at these by hand because they can harbour a lot of nematodes. As do weeds. The land should be ploughed at least twice before planting new trees.

When you are planting your trees make sure they are not going to be hanging around all day. Keep them in water, or the same damp sand. We used to have big apple bins that I put the trees in and covered them with sand. When I needed a few I took them out, put them on the wagon with moist burlap over them. You don't want the roots to dry out because once that happens they are lost. That is the most important thing. I wouldn't put fertilizer in the hole with the trees because it could burn the roots. Wait three or four days, then put it on. You might want a starter solution. Again, wait three or four days before applying it. There are recommendations available for exact amounts.

Depending upon the type of tree, what are the relative lengths to yield after planting?

A standard tree can take 12 to 15 years before it is really in production. With dwarf trees, the Malling 26 will give a crop in the fourth year after planting in the orchard. East Malling 9 supposedly takes three years but it is still pretty new to this area.

Do they go on producing forever with the proper care and management?

With proper care you can have 75-year-old, healthy, standard trees still turning out fruit, but they may no longer be producing enough to make it profitable. Dwarfing trees may also reach a peak and start to decline and it may be worth it to take them out and replant rather than trying to coax the last bit out. The old trees would not give enough production to justify the time and energy spent on spraying, pruning and so on. It may be cheaper after 20 years to take them out and start again.

Could we discuss the maintenance of the orchard, starting with pruning?

The first three years after planting pruning would be done for training: trying to develop a central leader and keep it, also scaffold limbs. Once they are made then you would modify the leader. It should not go straight up because you do not want the tree to keep growing, especially a dwarf tree. You modify the leader so that it will go off to the side and try to substitute it every once in a while with a weaker shoot, by either bending the leader back and letting one of the buds become the new leader or just clipping it. If you get two or three shoots developing from a pruning, cut to choose the weakest of the three to keep the growth down in order that the apples will be lower down.

Pruning should be done every year. The main object of pruning

is to let light in because apples that aren't getting enough light won't develop their full colour. Pruning is different in standard trees and dwarf trees. Apart from getting rid of the dead wood, you want to get rid of wood that is growing downwards or too high up. Generally speaking the more vertical the growth of a branch, the more vigorous that branch will be and the less fruiting it will give.

In dwarf trees you can tie down the branches to get a lower angle — it spreads the crotch angle in the middle and this increases fruiting. As fruiting increases, the energy going toward that apple will stunt the tree, which is desirable in a dwarf tree. If you follow a branch up and see an apple on the end of it, usually you know that the growth will just about stop because of that apple.

Pruning of standard trees should be done in late winter, the later the better but no later than bloom. To calculate when to start, it takes around 30 to 40 minutes to prune one big tree. Count the number of trees in your orchard and work backwards from let's say a week or two before full bloom. Don't prune too early. If you prune in November or December, the trees are more susceptible to winterkill because they haven't reached dormancy yet. Last year we had a very cold January and if people had pruned before January, they lost a lot of their trees. The bark came off the next summer. If you can, you are better off to wait, but with an extremely large orchard you have to go pretty well all year round. Pruning in the summer gives a more dwarfing effect than pruning in the winter. Winter pruning will give a tree more vigour. You can even go into large standard trees and completely lower the tops if you find they are getting too high. This means that you can cut off a big main branch that people were once afraid to

but because of winter damage. Tests have shown that if you do this in mid-August, there is not really that much more susceptibility. You have to remember that you will be chopping off apples and you can't because if you cut them, make your cut higher than it should be. Don't worry about the loss of apples because you should be letting in more sunlight and the balance of the apples should size up. Make sure the tree has had at least six full crops on it before attempting to do this.

Insects

In any area where there are apple trees there are going to be standard apple insects — green fruit worm, aphids, mites. The Quebec government issues "Pommier Protection" every year and this gives a good control program. The best method of control is prevention which is done by a spray program. Along with insects you might include fungi such as scab which is a problem here in Quebec because of the wet springs. Many of the insecticides and fungicides are compatible and you can spray them at the same time. You can spray 15 or 16 times a year and this begins as soon as the leaf just opens — a little after green up — except for possible dormant oils for eggs of mites. Spraying will last until mid-August, depending on the year. There are pre-harvest sprays to keep the apples from dropping.

If you don't have a spray program, you don't have a crop. It is as simple as that. Even the most ardent organic gardeners would have to admit that at least a fungicide would have to be applied.

Winter precautions and predators

Mice and deer can be quite a problem. The danger period for mice is during the winter and around harvest time. If you have a nursery or small trees, you can

spread a mouse bait which is bits of corn treated with phosphorous which kills them. There are also protectors that you can wrap around the trees that cost about 25 to 30 cents each and go up to a height of 18 to 22 inches. These should be buried an inch or two beneath the soil. Mice will move at soil level and at the level of the snow so you want to have both parts of the tree protected. As mice prefer tall grass, you can cut it. You can also go over it after harvest and spray with Endrin which, I might add, is quite toxic to humans and has to be used very carefully. For that reason I don't use it. I use protectors and leave the grass a little long, particularly with young trees because I want snow protection.

Deer can be a problem in the spring and winter and can also be around during the summer in some areas. When they can't find very much to eat, they will eat the buds. There is a spray that you can use — it is a latex paint with Thiram, which is a fungicide, and that mixed with water one to one sprayed on the bark of the trees should last all winter. Spray it late in the fall after the leaves are off with temperatures over 50 degrees F. During the summer you can spray Thiram along with your regular program but in a much less dense amount so that it won't interfere with photosynthesis because if you paint it white the chlorophyll will not be able to react properly. It is not poisonous to the deer; it just doesn't taste good so they go somewhere else.

As far as winter precautions for the trees are concerned, the cold is the main problem — the younger the trees the more susceptible they are. For young trees the solution of latex paint I mentioned earlier when sprayed on the south side of a tree can stop to some extent the sun burn (southwest disease) because the white paint reflects the sunlight

and you won't get the blistering that you might if you didn't spray.

What equipment is needed for a small-scale operation?

A tractor is needed and some type of mower. You need a sprayer, pruning equipment, ladders, pails, bins, and a fork lift to move the bins.

What about a back-pack sprayer?

A back-pack sprayer can be used but if the trees are large you will have to have some kind of compression, especially when using toxic chemicals. It can be very dangerous to be reaching up and spraying here and there because you can get drift on you. Even with three- to four-foot trees in the nursery it can be hazardous because you could be walking right into it. You can use a back-pack sprayer with Captan, for instance, which is a relatively harmless fungicide.

What about the pick-your-own business?

There can be damage done which can effect the next year's crop. You just can't pull the apples off because this can tear the abscission layer. Many people, unfortunately, either don't know this or, because it is not their own orchard, don't care. The apple should be lifted off with a twisting motion upwards.

Is there room for more apple producers in Quebec?

There is always room for good producers. If you are a good manager, your final product will cost you a lot less than somebody else's may cost them.

The Production of Birch Syrup

by Professor Robert Kok
Department of Agricultural
Engineering

Although maple products and their characteristic flavour are today well known, similar products obtainable from birch, walnut, hickory, ash, basswood, and butter-nut trees, once produced in quantity, are all but forgotten; syrup, butter, and taffy can be manufactured from the saps of these trees as well as from maple sap.

Canadian maple sugar production, consumption, and export have steadily declined during the last 20 years whereas the price of maple products has steadily risen. Bound by relatively small production, large manual labour requirements, and a short season, the maple sugar industry has seen its operating costs increase drastically as a result of rising wages and equipment prices. Attempts to partly automate sap collection and processing have met with varying degrees of success. To extend the period of equipment utilization and its productivity, trees yielding sap at a time other than the productive season of maples would be required. This condition is fulfilled by birch trees which start their sap flow during the final stage of the mapling season.

The processing of birch sap can be performed in a manner identical to the boiling of maple sap using the same equipment. A considerably larger quantity of syrup could thus be produced per dollar invested in equipment. Whereas up to 50 years may elapse between planting and initial tapping of a sugar maple, some species of birch can be tapped at a con-

siderably younger age. The grey birch (*Betula populifolia*) seldom lives longer than 30 years, for example, and can be tapped 15 years after planting when its trunk is five inches in diameter.

Large scale production of birch sap at present occurs in the USSR; approximately 30,000 tons are produced yearly in the Ukraine from various species of birch. The average sap sugar content has been reported to be 1.5 per cent. Although the Macdonald team has found only half that concentration in the sap of the grey birch, the white and yellow birch (*B. papyrifera* and *B. alleghaniensis*), both plentiful in Quebec, are similar to the species tapped in the USSR and might yield sap sugar concentrations somewhat higher than 0.75 per cent.

Grey birch trees were tapped in the springs of 1975 and 1976 in the Morgan Arboretum. Trees of diameter greater than five inches were selected randomly and tapped in the conventional manner. Sap was collected, sampled and boiled daily to a 50 per cent sugar concentration. Records were kept of the sap production and sugar concentration of all trees. As the trees were selected at random, some were tapped that would ordinarily be rejected if one were to judge tree health by general appearance.

In 1975, 16 trees were tapped to explore the possibilities. The taps were driven on March 17; the first sap flowed on April 14, just after the maple harvest was finished and the last vestiges of the winter's snow were melting. Sap was collected until May 6, although the flow had not stopped at that time. The sap had, however,

acquired an unpleasant "green" taste and odour. The average total quantity of sap produced per tree was nine gallons at a sugar concentration of 0.75 per cent. Fifty trees were tapped during 1976. Sap was collected between April 8 and April 28. By April 28 the sap had again become unpleasant tasting and smelling. The average quantity of sap produced per tree was only six gallons this season at an average sugar concentration of 0.74 per cent. A total of 23 pounds of sugar was collected.

The day-to-day pattern of birch sap flow is very similar to that of maples; the trees initially produce small quantities of sap, stop producing for a day or two during a cold spell and then rapidly increase their sap flow to a maximum. Although the initial increase is rapid, the diminution is slow and gradual. Sap collection is usually stopped before the end of sap production, since the odour and taste of the sap become unpleasant as soon as the first leaf tips are visible on the trees. Several trees were observed exuding sap for as long as several weeks after the end of tapping. A gradual increase in the ash content (minerals) of the sap during the tapping season was an interesting, if somewhat unexpected, phenomenon. An investigation to study the variation in maple and birch sap composition and an evaluation of the possible effects thereof on syrup quality is being planned.

During the analysis of the data it was attempted to determine if any relationships existed between such factors as tree size, sap production, sap sugar content, etc. It was found that, on the average,

he larger trees yielded more sap, although some of the smaller trees were surprisingly productive. No relationship was found between the tree diameter and the sugar concentration, nor was there any relationship between the sap volume and sugar concentration of individual trees. Grey birch trees often grow in clumps of two or more trunks sharing a common root system; no difference was

found between the sap yield of these "clumped" trees and trees growing singly. All in all, it is impossible to predict with certainty which trees will produce the most sap or the highest sugar content. In the groups of trees that were tapped several were included with split and rotted trunks. As was expected, the sap yield from these was rather low. Choice of trees according to criteria such

as general appearance and minimal size must be adequate for the time being.

Birch syrup is slightly more acidic than maple syrup and has a flavour all of its own, halfway between blackstrap molasses and lemon juice. It is fairly dark although it is not clear if its colour is not partly caused by the extensive boiling required. Since the sap sugar concentration is only 0.75 per cent, it requires more boiling than maple syrup. The possibility of initially increasing the sugar concentration by methods other than boiling, such as reverse osmosis, is being investigated. Taste evaluation of the birch syrup by Macdonald students has been encouraging, although it is clear that more work is needed before birch syrup could be marketed commercially.

The production of birch sap and syrup is complicated by the relatively high temperatures during the tapping season. Bacteria, fungi, and yeasts were found growing in quantity in some of the taps at the end of the season. It is hoped that the various difficulties encountered will be resolved by the use of better tapping and boiling methods; in a few years birch syrup might be as common as maple syrup on the shelves of Canadian supermarkets.



Records are kept of the sap production and sugar concentration of all the trees that are tapped.

THE PRIVATE WOODLOT — WHERE IS IT GOING?

by **Gerry Madigan**
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Woodland Resources
Dept. of Renewable Resources

Canada has held a unique position in the world as a producer and major exporter of wood and its products. We have been a "have" nation. The revenues generated by the exports of wood and its products (5.5 billions) far exceeds those generated by the export of agricultural products (3.9 billions) and is only exceeded in importance by the export of mineral products (5.7 billions) according to 1974 Statistics Canada figures. On a manufactured basis forest products rank below agriculture and mining but their worth to the Canadian economy is 3.2 billions annually.

Farms in eastern Canada have from one third to more than half their area in forest. These forests are often leftovers. Unsuitable for agricultural production, high cost of clearing, or some other reason result in a low-use priority of the farm woodlot. Little attention has been paid to the woodlot other than its use for occasional cuts for cash, for firewood, or to help pay for some family emergency. Little effort has been made by governments or researchers to look at the woodlot as a potential source of farm income. Why bother with small tracts of land when Canada has vast areas of conifers to the North to supply forest industries? This remote supply is getting more remote day by day as transport costs increase and wood quality decreases. A lot of forested lands are non-productive because they are currently inaccessible, bog or water logged, and growth rates are low. Although we currently cut about one half of the nation's annual allowable cut of eight billion cubic feet, not considering losses to fire, to insects, and to disease; experts suggest that by the turn of the century the cut

will exceed annual growth by 30 per cent.¹ Forest capital is being liquidated on a depletion schedule.

Keeping these current trends in mind, the time is ripe to invest in the small private forest! Steenberg, former FAO forestry director, recently stated Canada will exceed its allowable annual cut by 1990.² Canada can meet the challenge to study woodlots with a program that could alleviate economic and regional disparity through employment of the rural work force with government incentive programs to get private lands under silvicultural and management practices. The advantages for eastern Canada being:

- 1) a favourable location for good growth;
- 2) readily available local manpower;
- 3) the infrastructure for wood production exists (i.e., towns, mills, transportation systems, communication systems).

Some of the problems hindering such development are taxation, succession duties, length of tenure, owner attitudes, goals, and short planning horizons. Trees are a long-term investment. Trees are not generally looked on as a crop like agricultural crops. The owner does not get tax assistance as does land under agricultural production. Tilling, planting, weed suppression, and harvesting are all a part of agriculture. In a managed forest these processes are an integral part of the management process.

Recent indications that the situation is becoming critical are cited in forestry literature. William McKillop, associate professor in the Department of Forestry at the University of California, stated in 1975.

"Increasing (U.S.) domestic timber supplies may improve the balance of payments stemming the rise in wood

imports from Canada. A major goal of National forest policy must be to achieve . . . , a relatively high timber harvest from non-industrial woodlands".

These southern private forests are located in a more favourable climatic range, comprise more than 50 per cent of the forest lands of the United States, have a favourable atmosphere toward investment, and the infrastructures exist to meet the challenge of producing wood fibre. The United States is investing money in its private forests. Fifteen million dollars has been allocated for private forest incentive programs for 1977 provided that a landowner owns no more than 500 acres of land and receives no more than \$10,000 total cost sharing funds during one program year.⁴

What is Canada doing? This year the National Research Council cut back its research grants for forestry. A recent report to the Minister of the Department of the Environment by the Canadian Forestry Advisory Council states, "The reorganization of the Department of the Environment 1974 downgraded the Canadian Forestry Service to a relatively minor role." The same report recommends a high priority be given to support professional and technical forestry education and research by university forestry schools. In view of cut-backs how can this come to pass? Without an increased effort in the field of forestry development and management, Canada may well decline from a "have" to a "have been" nation. While other countries are attempting to take one step forward we are doing our best to take two backward!

What can help? More dollars for small forest research and more and better efforts to inform the public. Eliminate our backward attitude to the forest resource. There is no unlimited supply! Trained people are needed to manage, to harvest, to market

products at all business levels from the owner, to the contractor, to the harvester and wood buyer to minimize waste and losses. Some of the waste and losses are caused by poor training, some by attitude. The seasonality of the work, the instability of the workforce, the returns, and the position of the owner as the man caught in the middle between the consumer and the buyer in an uncertain market place are factors that effect productivity. The change from unskilled to skilled labour could well reduce losses and instill a sense of pride for the job and a feeling of self-esteem. Improved marketing opportunities or low value wood material could provide better incentives for improved forest management. These require a push from governments to get started.

Is there anything being done? In Quebec there is the Cr dit Forestier Program, the Groupement Forestier Program, and the Reforestation Assistance Program to Private Land Owners. These programs assist by inputs of money, planting stock, or equipment and are based on the initiative of the individual owner, and more recently have dealt with group action aimed at improved use of the resource.⁵

What is required is more active technical involvement by government to ensure a better return on investments of the present programs.

Another example of what can be done is New Brunswick where the Tweeddale Forestry Study Report was completed in 1974. One of the major points of the 10 recommendations that resulted in the Statement of Policy on Industrial Forest Development, January 1976, is the Crown will be the "residual" supplier of wood.⁶ Privately-owned forests in the province are to be considered the primary suppliers of raw material for industry. This policy is a good incentive to private forestry and is a means to reduce

regional disparity by stimulating work on private forests in a province where 52 per cent of the forest area is privately owned.

The Tweeddale Report also recommends 40,000 acres of private lands be given silvicultural treatments at a cost of \$30 per acre.⁷ The Department of Forestry Extension was reorganized into the Ministry of Natural Resources to expand its assistance to private landowners and training of forest workers.

The New Brunswick program has set the stage but a few problems remain. The silviculture budget of 1.2 million has been cut by one half. The staff working on Crown land is disproportionately large compared to that working on private lands. The assistance programs to the landowners has its limits. The government will subsidize 40 per cent of the forest road building cost in the Road Assistance Program to a maximum of \$1,000 per year. Assistance in the Christmas Tree Program amounts to \$80 per acre to a maximum of 10 acres in any one year.

Other factors hindering progress may be attributed to the damage caused by spruce budworm. The government's policy is to salvage the budworm damaged wood. Most of the effort has been confined to Crown land. Stumpage on Crown land is \$2 per cord compared to \$6 per cord on private land. This places the private owner in a poor competitive position. The mills are obtaining cheaper wood on Crown land despite the recommendation the Crown be considered the "residual" supplier. As it is a new policy, most companies are still obtaining their supply from the traditional source. At the same time the government is forcing them to buy from the private sector. Because the pulpwood market is flooded with budworm damaged timber, the buyers are demanding more valuable material in order for the private owner to make a sale.

Often an owner must sell a truckload of pole-size sawlogs in order to sell a truckload of pulpwood. What incentive is there for the private owner to manage his land when he is forced to sell his vigorous stock before it has peaked in value? The private owner is paying the price for a government policy which is at odds with another policy. With a disproportionately large staff working on Crown land, the private owner in New Brunswick finds himself in a new dilemma.

Despite these problems and growing pains, the programs initiated in New Brunswick show hope and initiative for the future. Can the New Brunswick experience be transported to other eastern areas? Can Quebec develop a socially-oriented forest policy to meet the needs of its rural population and the challenging future demand for wood fibre? Will Canada continue to be a "have" nation? Must we always respond to a crisis situation before acting? Do we not have the insight and forethought to prescribe action based on our present symptoms to develop careful planning of our forest resources? Our policies or lack of them do not indicate this at all.

The private woodlot — where is it going? As I see it the private woodlot can be a good investment for the future. It can be a means to help improve an individual's income and ultimately his standard of living. The development of the resource can be a means to reduce rural poverty through self-employment programs to manage and to harvest products from one's own woodlot. To the governments it may be the buffer our forest resources need to halt a future scarcity. The best direction the private woodlot can take is through incentive programs to get the lands back into production, even increase production, and reduce losses. More educational programs to train managers and

(Continued on page 16)

The Family Farm



Published in the interests of the farmers of the province by the Québec Department of Agriculture.



Research Being Carried Out By The Québec Department of Agriculture

The main purpose of this research is to ensure that the best production techniques which have been tried and tested under Québec conditions can be recommended to farm producers to make their enterprise more profitable and meet consumers' needs.

In this respect the Department's research services must assume leadership in matters related to recommendations of a regional nature, especially in the following sectors: soil science, management and fertilization, crop management, adaptation of kinds and varieties of crops, crop protection, livestock feeding and genetic improvement, harvesting, processing, and conservation of products.

The Department's Research Branch cannot carry out all the research projects required by these sectors. However, it must see to it that the needs are met by the various research bodies, play an auxiliary role, if necessary and, above all, supervise the tabulation and vulgarization of research data.

Its research aims are manifold—but one ranks above all—that is to produce improved foodstuffs in greater quantities while at the same time conserving and improving the soil for future generations. In short, they are concerned with people and the quality of life.

The Research Branch of the Department of Agriculture consists

of three services, namely crop protection, soils, and research stations. Let's take a brief look at the work they perform.

Crop Protection

The crop protection research service is responsible for research projects on the prevention and repression of menaces to crops, with particular attention given to the protection of the environment. Mainly interested in plant diseases, insects, noxious plants and animals, it is carrying out ecological and botanical studies. It is responsible for the inspection of nurseries and the application of the Noxious Weeds Act and the Plant Protection Act.

To assist farmers, the Plant Protection Service recently set up a Crop Warning Network. It provides information on nine different crops which is efficiently transmitted by the press, telex, radio, television, telephone, and circulars. This network has two basic aims: to provide timely information on the most efficient measures to farmers concerned with effective protection of crops; to channel more efficiently the research carried out by crop protection specialists.

Soils Service

This service aims at determining the agrological value of soils and at studying their nutritive value in addition to considering the methods of feeding minerals to plants. These aims are pursued

in a program of activities covering four principal fields, namely pedological classification and cartography, chemistry and fertilization, preparation and use of soils and analytical methodology.

During 1975-76, the Soils Service followed up studies begun some 30 years ago which have become the subject of numerous publications. It recently published a pedological study of the Counties of Dorchester and of Portneuf. Moreover, prospecting has been completed in Temiscouata and Charlevoix and is in progress in Arthabaska, Wolfe, Frontenac, Mégantic and Beauce. In Kamouraska and the Magdalen Islands, studies related to soil classification and cartography are being carried out for agricultural purposes. Results of a similar study on Richmond County were published in 1975.

The St. Lambert Station at Lévis, which was opened last year, will henceforth be the main experimental site for research on manures and their long-term effects. These ongoing experiments will supply most valuable information.

The Soils Service has been asked to make a critical analysis of the report on the "Impact of the Dispersal of Gaseous Fluorides" in connection with the proposed opening of an aluminum plant in St. Augustin. According to critics and observers, such a plant is not in keeping with the agriculture carried out in the region.

Research Stations

The Agricultural Research Stations Service is in charge of research work and experimental developments in plant and animal sciences. It is concerned with improving crops and livestock and developing new production methods. It is also responsible for the production of Elite strawberry plants and pedigreed seed for cereal and forage crops. There are five research stations, namely at Deschambault, La Pocatière, St. Hyacinthe, Ste. Martine and Les Buissons.

The achievements of this Service are numerous, the most recent ones in the plant improvement field being the licensing of the Concorde cultivar which is equal or even superior to Opal and Glenlea cultivars. The same project has come up with other varieties of spring wheat greatly valued for its early growth and higher yield. Research on tomatoes has resulted in three cultivars: the Canabec, Rosabec and Ultrapec. As for cucumbers, research has come up with the "Québec Vert" which is resistant to mosaic. In the potato sector, seeds resistant to rhizoctonia have been selected. In 1975, production of "Select" and "Foundation" seed varieties supplied 38,735 kilograms of cereal and soybean seeds, 18,775 strawberry plants and 594 raspberry cuttings to producers for multiplication purposes.

The main research on herd and flock selection has centred on poultry and dairy cattle, including crosses between the "Suisse-Brune" and "Canadian" dairy breeds, selection of lines of Leghorn-type laying hens and meat turkeys, program of saddle horse

production based on the "Canadian" breed, introduction of swine insemination, crosses between Finnish hybrid ewes with Oxford and Suffolk rams, feed trials with ensilages, experiments on wintering bees, heating of colonies, the development of a substitute for pollen used in feeding bees, etc.

In the maple products sector, work is being done to improve maintenance methods of the Sys-Vac system in order to ensure better quality maple products.

In summary, research work completed to date by the research services of the Quebec Department of Agriculture have led to a storehouse of practical knowledge with regards to soils and crop enemies in Quebec; to the introduction of new plant varieties (tomatoes, turnips, cucumbers, spring wheat) and new lines of hybrid animals (laying hens, turkeys, cross-bred horses and cattle); to new breeding methods (artificial insemination of swine) and in crop production, including the system of collecting maple sap; and to the development of preventive measures for mildew and the detection and control of rhizoctonia in potatoes.

Future Prospects

According to Dr. Bertrand Forest, general director of the Research and Education Branch of the Quebec Department of Agriculture, agricultural research constitutes one of the most difficult yet most exciting aspects of modern scientific research. In his words "Research projects, like problems, are not lacking in Quebec. We should pursue our efforts for

a more complete knowledge of the soil and physical environment, re-examine the agricultural suitability of certain regions, provide for systems of land development to meet the needs of agriculture and the general public alike, update methods used in crop and livestock productions to bring them in line with food needs and requirements for conservation of the environment. We must create or discover new types and varieties of plants, new breeds of animals, new methods of farming and livestock raising which are adapted to the special and rigorous conditions in Quebec. Under such conditions, we must strive to obtain even more economically better yields from our present agricultural operations. The science of agriculture has not yet exhausted all its possibilities."

LEADINGS DATES IN THE HISTORY OF RESEARCH CARRIED OUT BY THE QUEBEC DEPARTMENT OF AGRICULTURE

I Forerunners' Period (1913-1943)

- 1913 Founding of an Entomology Section.
- 1920 Entomology Section becomes the Plant Protection Bureau.
- 1937 Plant Protection Bureau becomes a Service.
- 1938 Setting up of five Field Laboratories.

II Pioneer Period (1943-1961)

- 1943 Creation of an Information and Research Service including the Plant Protection Division.
- 1947 Founding of the Agricultural Research Council.

III Contemporary Period

- 1961 Founding of the Manicouagan Station.
- 1962 The Deschambault, Manicouagan, and Les Buissons Stations are affiliated with the Information and Research Service.
- 1963 Integration of the Soils Division with the Information and Research Service.
- 1965 The Information and Research Service is divided into two sections. The Plant Protection Division becomes the Crop Protection Division and the Ste.Martine Station is added to the Research Service. Creation of a Research Stations Division.
- 1967 The Research Service becomes the Research and Education Service. Annexation of the La Pocatière and St. Hyacinthe stations to the Research and Education Service.
- 1968 Annexation of the Beekeeping and Maple Products Division to the Research Service.
- 1971 Transfer of the Research and Education Service to the Scientific Complex.
- 1973 The Service becomes a Branch.
- 1974 Appointment of an assistant general director for Research.
- 1975 The Divisions become Services.
- 1976 Appointment of an assistant general director for Education. The directors

of the Deschambault and St. Hyacinthe stations are made assistants to the general directors.

MORE THAN \$1 MILLION DOLLARS IN RESEARCH GRANTS

The Quebec Department of Agriculture recently allocated a total of \$1,132,025 in research grants for the 1976-77 fiscal year. The Quebec Research Council and Agricultural Services receives applications each year for grants from Quebec universities. The proposals for agricultural research projects are studied, accepted or rejected, as the case may be.

McGill and Laval Universities lead in the number of project proposals and in grants allocated. They will receive \$484,400 and \$387,875 respectively. Montreal, Quebec, and Sherbrooke Universities will receive \$171,250, \$51,500 and \$37,000 respectively. The 73 research projects will be supported by grants totalling \$1,132,025.

The research grants are distributed among five programs, namely Livestock Productions, Crop Productions, Soils, Food Science and Technology, Economics, and Agricultural Sociology. Several themes are considered within each program, e.g. crop protection; improved biological efficiency; the relation between climate and crop yields; soil improvement; improvement and quality control of products; new products and use of by-products.

HUMAN AND ANIMAL LIFE COMPETE FOR PLANT PROTEINS

According to Dr. Bertrand Forest, agronome and Director General of Research and Education, the rivalry of human and animal life for available plant proteins is not always as evident as one would have us believe. On the one hand, the quantities and proportions of grains used in the production of meat have been overestimated and on the other hand, the efficiency of the feed conversion rate has been underestimated. Therefore, it is not certain that there would be more grains available for human consumption if consumers ate less meat.

It is only in meat and grain-producing countries where grain yields exceed human needs and where economic conditions have brought about a greater demand for meat, that ruminant livestock is being fed grain. In addition, it should be noted that in such countries, beef cattle consume mainly corn, oats, barley, and sorghum which are still in limited demand for human consumption. Actually, if they were not used as feed, only a portion of these grains and their proteins could be salvaged and used to feed needy nations.

Although ruminants consume grains and concentrates, fodder makes up most of their feed, that is, about 80 per cent according to 1974 figures for beef production in the United States. Beef and dairy cattle can be raised without grains, but if this is the case, the fodder must be of superior quality to ensure adequate feeding. Unprocessed plant

products such as forages, provender grains and undesired or unsuitable by-products are transformed by cattle into meat and milk of high nutritive value.

It is estimated that 40 per cent of American beef comes from animals which have not consumed any grains. Little is known of the importance and economic value of forages grown in soils often found unsuitable for grains or unfit for other crops.

Faulty calculations have demonstrated the inefficiency of cattle in converting grain into meat. These data are based solely on the last fattening phase in feedlots. Grasslands, roughage foods and other products which are unsuitable for human consumption and which have constituted livestock feed are not taken into account if one considers that only about 35 per cent of an animal's total weight is obtained in the final feedlot phase.

Animal fats have been considered a source of coronary diseases but a direct relationship between cause and effect has never been established. On the contrary, such fats play an important role in our diet which requires meat. The market for meat products is very important for Canada and the United States and, therefore, this is no time to create panic which would be detrimental to an industry whose function is to maintain a balanced development of crop and livestock productions.

Available grains may just as easily be used for fattening cattle as for meeting the needs of foreign countries, food manufac-

turers, governments, and charitable organizations.

Throughout history, animals have supplied man with quality and varied food, not to mention the numerous by-products. Nevertheless, we still have a long way to go before all the possibilities in livestock productions have been explored by modern technology, the use of more effective breeds and the application of tested feeding methods.

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HOW TO OBTAIN MAXIMUM PERCENTAGE CONCEPTION IN CATTLE

Cattlemen who have a herd with 70 per cent of the cows conceiving after the first mating and who obtain a maximum of two matings per cow are considered by the Veterinary Services to be operating very well.

In order to secure such favourable results, the Veterinary Services of the Department of Agriculture makes the following suggestions:

- Pay special attention to herd management.
 - in this regard, details such as age, weight, problems related to each subject in the herd should be recorded.
- Provide adequate feed for all subjects.
 - A primary and essential

condition is to ensure quality feed through testing.

- Build an enclosure inside and outside the barn to encourage exercise on the part of cows with reproduction problems.
- Have a practising veterinarian examine the cows that have not conceived after three matings.
- Allow a cow a 60-day rest period after each calving.
- Observe closely for signs of heat.
- Avoid reproduction problems of an infectious nature by:
 - disinfecting the barn regularly;
 - keeping dogs and cats away;
 - placing boots for visitors and a foot-bath at the entrance of the barn.

If these suggestions are heeded, they will prevent difficulties and improve the yield of a herd marked by infertility.

- A low rate of conception in a herd will cause later calving, which means a delay in the cow's production or in the start of a young cow's production and a consequent milk loss for the raiser.
 - reduced production rate of replacement cattle;
 - losses from the upkeep of unproductive animals.

It should be remembered that "cows" whose heat period has not been detected or who have reproductive difficulties reduce considerably the herd's yield. Therefore, keep an eye out for complications and consult the veterinarian at the nearest local or regional office, if any should arise.

THE IMPORTANCE OF DETECTING INTERNAL PARASITES IN SWINE

The Veterinary Services of the Quebec Department of Agriculture would like to warn breeders against the danger that is menacing swine herds, that is internal parasites commonly known as worms. Because hogs are rather predisposed to worm infestation, the Services quite rightfully insist on the importance of warning raisers against such enemies.

A Dangerous Enemy

The damage caused by internal parasites is a constant factor in financial losses. In fact, the presence of worms in pigs signifies lower profits since these parasites interfere with yield. Certain kinds of worms cause gastric and intestinal irritation which consequently result in an incomplete digestion of feed and nutritive elements. Other parasites retard the hog's growth and reduce its resistance, thereby making it more prone to other diseases.

Main Types of Worms

In order to check this number one enemy, swine raisers should be able to identify the main types of worms.

Ascaris (threadworm) is a roundworm, the size of a pencil, which in the adult stage may measure about 12 inches. This worm multiplies rapidly since the female lays up to 250,000 eggs per day. In the course of several weeks these eggs develop and infest the animal. *Ascaris* is characterized by late growth and a lower resistance to other diseases.

Nodular Worm is a very small worm found in the large intestine, which causes decreased absorption of nutrients and consequently slows down animal growth.

Red Stomach Worm is another internal parasite found in the stomach, very small in size ($\frac{1}{4}$ inch) and reddish in colour. It feeds on blood and causes an inflammation of the stomach, thereby reducing food absorption.

How to Eliminate Internal Parasites

Today, the vermifuges found on the market can effectively control most of the internal parasites in swine. The producer who intends to check worms in his herd may do so by specific treatment. Sows should be treated a week before farrowing and at weaning; boars should be given a vermifuge two to three times annually. It is recommended that piglets be treated a week after weaning and again 50 days later. If hogs are kept for breeding purposes, they should receive another vermifuge at about six months of age. In addition, hogs introduced into the herd should be given a vermifuge at the end of the first week of quarantine. More detailed information may be obtained from a veterinarian who will detect the kinds of internal parasites present, determine the degree of infestation, and prescribe the appropriate treatment.

How to Prevent Internal Parasites

In addition to the use of medications, the following preventive measures may be applied. Before farrowing, wash the sow's udder with warm, soapy water; disinfect the premises after each

farrow to prevent contamination of the piglets; clean the floors regularly in order to lessen infestation in a herd; avoid sending sows into infested areas; provide adequate feed; avoid overpopulation and poor ventilation in order to make the animals more resistant to infestation.

In conclusion, it should be noted that a regular program for combating worms should be included in the management of all swine enterprises. This would result in a marked increase in yields and profits for producers concerned.

(Continued from page 11)

harvesters and to better inform the public of the value of the resource are required. Investment by government in the small private forest is an investment for the future. It is not only an investment in forestry but also in the people. After all is not Canada's greatest resource its people?

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QWI

Prize Winner

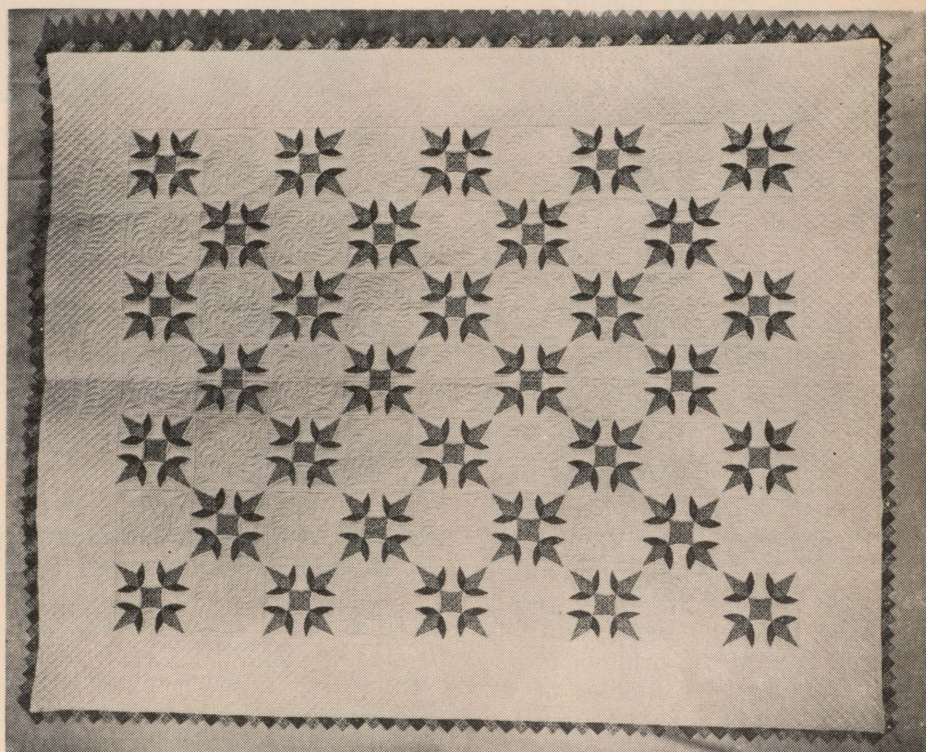
Results of the Second International Quilt Competition co-sponsored by the Women's Institutes of Nova Scotia and the Atlantic Winter Fair have been announced. First prize was won by Mrs. Dorothy Dunn of Calgary, Alberta. The second prize went to Mrs. Melvin Dewar of St. Philippe, Quebec. Last year's winner Miss Louise Vincelli of Yarmouth, Nova Scotia, placed third and fourth prize went to Mrs. Radine Anderson of Robart, Saskatchewan.

The first prize was an oak leaf appliqué quilt. The name of the pattern of Mrs. Dewar's was "Turkey Tracks". The third prize was named "Flower Basket" and fourth prize was named "Log Cabin".

Mrs. Dewar's quilt is 72 by 84 inches. It took two yards of cloth for each colour for the pattern and edging, 10 yards of white cotton cloth for the back and front. The stitching of it required 700 yards size 40, of J. & P. Coats thread. It took 200 quilting hours to make it.

Mrs. Dewar said it took two days to get the first block together. This quilt was also shown at the Atlantic Fair this past June and took the Red Ribbon there. "A thing of beauty is a joy forever" aptly describes this masterpiece. The fortunate recipient of this beautiful work of art will be granddaughter Kendra.

This is not the first quilt that Mrs. Dewar has shown. In 1967 she and her husband designed a Centennial Pattern which was incorporated into a quilt and won first prize in the Salada Food Contest with prizes being awarded at the annual Convention at Macdonald College that year.



Mrs. Dewar says she would have never started to make quilts if it had not been for the encouragement and persuasion given to her by members of **Frontier WI** (Argenteuil County) who must have thought she had the ability to make her first in 1967.

A Scotsman, who once saw a beautiful work of art, said "It takes 'the bun'". The same expression could be applied to Mrs. Dewar's sensational quilt.

Mrs. Myrtle W. Thorburn
Publicity Convener
Argenteuil County.

Congratulations

We were delighted to learn that FWIC Past President Mrs. John McLean had received an Honorary Doctor of Law degree at the Fall Convocation of St. Francis Xavier University in Antigonish, Nova Scotia.

An Enjoyable Tour

Last July, the **Franklin Centre WI** went on a bus trip to the Canadiana Village in Rawdon. The bus trip was filled with the scenic splendour of the Laurentian foothills. The village is a tribute to our pioneer ancestors and was restored by Mr. & Mrs. Earle Moore on their own. They started with an old home and furnished it with antique furniture. Much of this furniture Mrs. Moore refinished herself. They were able to acquire a log school house from Lakefield, which Mr. Moore's grandfather attended when he was a boy. I enjoyed the biscuit that each guest was served on arrival; it had been baked in the old outdoor oven. The covered bridge from Coaticook, Quebec, has been erected across the Red River in the Canadiana Village. A general store from St. Anicet is packed full of old

Mrs. Stanley Smith presenting Mrs. Sydney Berry and Mrs. James Berry with 25-year pins. Mrs. Smith was branch President of the Upper Lachute East End WI when these ladies joined in 1951.



general store goods; they also have the original Rawdon Post Office. The grist mill, with its water wheel and mill pond add their quiet peaceful charm to the little village. The country doctor's office, veterinarian's office, and a military display all added to the authenticity of the village. A priceless collection of cradles, spinning wheels, butter churns, lamps, and glass are on open display.

We were served lunch by the Moores and their hired help in the downstairs of the old Grist Mill. After a leisurely afternoon in the setting of rugged and simple country life, we were served tea and pumpkin bread. Mr. Moore treated each of us to a short tour in his Model T car. Our last stop was the St. John's Church of Kildare. The Moores patiently salvaged the log structure and moved it, piece by piece, and restored it with the original pews, organ, lecturn, and books of service. We thoroughly enjoyed each segment of our tour of Canadiana Village.

Mrs. Percy Sutton
Franklin Centre WI

Special Days

Two "special days" during the year when **Aubrey-Riverfield** WI (Chateauguay-Huntingdon Co.) can lend a hand to community service and try to extend some help or gladness to needy families are, first, Achievement Day in September when WI members cater lunch for the 4-H Club and donate prizes towards the Garden Club and Handicraft competitors. And, second, our Social Service Christmas meeting held in the church hall when members gather at 10:30 a.m. Quilts are set up and worked on until noon when everyone enjoys a potluck luncheon. Following this the regular meeting is held, consisting of business, Christmas story, carols, and exchange of small

gifts. Quilts are finished and, along with donations of toys and warm clothing, are forwarded to needy families.

This meeting makes a pleasant day for WI members and gives the satisfaction of doing something for "Home and Country".

Hazel Robertson
Aubrey-Riverfield WI.

Resume of Answers to Discussion at Members' Conferences

1. What is the WI and what does it mean to you?

The Women's Institute is a non-denominational group of dedicated women working for the good of the community. It is affiliated with the international organization of rural women's groups.

Through the WI, rural women are able to discuss common problems and take action for the betterment of children and people in the community and the world over. The WI broadens our outlook and provides new interests. Locally, money is raised to enable groups to promote school fairs, provide bursaries to students, to further the work of national and international groups such as CanSave and UNICEF, and to give help in the community in time of need.

2. What are we doing to better the life of our senior citizens?

The elderly in homes, as well as those living alone, are visited. Jams, jellies, home cooking, and surplus garden produce are donated. Holiday cheer and sunshine baskets in time of illness

are provided. The elderly need to be involved in order to feel needed and appreciated. Suggestions for accomplishing this are: (a) Stop regularly, even if it is just long enough to say "Hello"; (b) Drive them shopping, to teas, or on short trips; (c) Take a sincere interest in them and value their wealth of experience.

The W. I. could work for more homes in local communities, so that the elderly would not need to be uprooted.

3. What are your responsibilities as a retiring officer?

Retiring officers should pass on any useful information and volunteer help if it is appreciated. Some conveners keep a list of the year's accomplishments and duties in a notebook which is turned over to the incoming convener. Retired conveners should stay interested and active.

4. What are your thoughts on land use and ownership?

The cause for the loss of good farmland is lack of foresight. More thought should be given to preserving the landscape or farmland by formulating carefully thought out, flexible laws which are applied fairly. Decentralization is necessary to give proper concern to individual areas. Counties and municipalities need more power.

In order to ensure the protectiveness and usefulness of our forests serious thought should be given to reforestation, but at the same time care must be taken not to lose good farmland to in-



A photo sent in recently of the Pontiac delegates at Convention. Front row: left to right: Mrs. Lorne Routliffe, Mrs. Roland Graham; 2nd. Row: Mrs. H.R. Rabb, Mrs. Allan Poole, Mrs. Wm. Reynolds; 3rd. Row: Mrs. Muriel Bronson, Mrs. Walter Kilgour, Mrs. Cyril Dagg, Mrs. Clarence Knox, Mrs. Lyall Cameron, and Mrs. Ruth Woolsley.

Some members have now started quilts of their own and others have made chairbacks, etc., piecing and quilting on a smaller scale. Those who worked on it learned much from the project and have had the satisfaction of knowing they had created a useful and beautiful article.

Mrs. Jas. Robertson
Hemmingford WI.

Dear WI Members,

Amidst the bustle and excitement of the holiday season, I have been thinking about my column for this issue. February, the second month of the new year, can almost claim to be the last month of winter and comes from the Latin word, Februarius, month of expectation. On the 15th of this month the great Roman feast day of purification was celebrated. But we have a feast of our own, for Valentine's Day is observed in memory of someone whose life was spent in service for others, so each year we honour St. Valentine by sending cards, not only to the ones we love but to those we hope to cheer. A short time ago I read the short book entitled "I Want to Laugh. I Want to Cry." In the introduction the author says that many people claim that reason should guide all that we do and think, and that feelings are a weakness. But this writer maintains that we could cultivate and show our feelings; for that is what makes us unique and sensitive human beings. So let's celebrate Valentine's Day in the full meaning of the term. This recipe might be a help, especially for a children's party.

A Valentine Snack

Economy and nutrition combine in this heart-shaped lunch or supper recipe. Use cardboard to make a heart the length and width of your slice of bread. Lay a slice of cooked ham, or processed meat (beef, chicken, or veal) on

discriminate tree-planting. Foreign ownership is mostly for speculation and indifferent to the needs of a community. Urban ownership of rural lands for weekend use is bad for the environment, as often the land is not put to good use. The need of money in low income families produces a lack of concern for the eventual ownership or use of land.

Canadians should be given reasonable and preferred prices for land, and should be made more available to young people interested in farming.

The WI can study the legal aspect of land use and stress the importance of its proper use.

Tweedsmuir Project

When our branch, Hemmingford WI (Chateauguay-Huntingdon Co.), decided to enter a quilt in the Tweedsmuir contest for 1976, we had no idea of the work that could be involved. We appointed a committee to get the material and choose a pattern.

As it was to be a group effort, amateur at that, the pattern had to be a simple one with few pieces. We felt pieces on the bias, such as diamonds or triangles, could be difficult to piece evenly as a group. We finally settled on the Rail Fence pattern. This consisted of four oblongs of different colours, $2\frac{1}{2}'' \times 8\frac{1}{2}''$ each. The finished block would then be $5'' \times 8\frac{1}{2}''$. When all were put together, the quilt would have a series of eight-inch blocks. The pieces were all put together in the same order, but in each

block the four colours would lie at right angles to the one before, and two of the colours would then zig-zag across the quilt to form the rail fence pattern.

The material was bought and three members cut out the pieces. These were then given to interested members to be sewn together by hand. After the blocks were ready, they were sewn together in strips—care being taken to match corners. Sometimes a block had to be re-sewn to make it fit so this was quite a long process.

We met in two different homes to do this and enjoyed the social aspect as well as the work. Once the top was finished, the lining, polyester filling, and top were put together in the frames in a member's home. Members popped in whenever they were able to spend an hour quilting. The winter before, one lady had set up a quilt of her own and invited anyone who wanted to learn to practice on hers. This helped considerably when the "contest quilt" was ready and in the frames. After the quilting, the edges were bound, taking care to mitre corners, thus preventing wrinkles in the binding. As I said before, it was amazing the number of problems we amateurs had to overcome.

The finished quilt was displayed for the rest of the group to see and pictures taken. Then it was sent to the QWI office for the provincial judging. It happened to be the only quilt entered from Quebec. We did not place among the winners of the Tweedsmuir Contest at P.E.I., but our quilt did add to the display there.

a slice of whole wheat bread. Cover with a slice of cheese. Top with your heart pattern and cut around with a sharp knife or kitchen scissors. Broil until cheese melts, about two minutes. Sprinkle with pepper and paprika for flavour and colour and serve at once.

A Christmas banquet was held by the members of **Grenville** branch at the home of Mrs. Muriel Dupuis. Beautiful decorations, timely music, and a real Christmas dinner, combined to make the event most enjoyable for the 19 ladies present. They exchanged gifts, but each one brought a present for a child in an orphanage and also donated a tea towel for future use by the branch. A visit was planned to the home at St. Philippe in January other than at Christmas, when the residents are so well remembered. The Knights of Columbus are collecting for baskets for the needy and the WI will donate to this worthy cause. Also, ways and means to procure good books to start a library were discussed. **Pioneer** and **Jerusalem-Bethany** branches visited the Manoir St. Philippe. At the **Pioneer** meeting, Mrs. Perley Clark addressed the group on Institute work. Mrs. Keith McCraig reported on the recent executive meeting and stressed the importance of conveners sending in provincial reports promptly. The Christmas supper for the Senior Citizens was co-sponsored by the Legion Ladies and by the **Brownsburg** WI. A delicious repast was served to 120 people. Twenty-five door prizes were given. At **Brownsburg** 28 members and guests enjoyed Christmas entertainment. Flowers on the piano were in memory of the late Mrs. Florence Zimmer. At **Jerusalem-Bethany** meeting a tribute was read in memory of the late Mrs. Hilda Boyd, a charter member.

Other branches, too, held meetings that celebrated the holiday

season. **Beebe** ladies invited their men folk for a Christmas dinner held at the Legion Home. Other branches in **Stanstead County** sent gifts to the Dixville Home and to community shut-ins.

Brompton Road held a neighbourhood Christmas tree party, complete with plays, recitations, accordion solos, apples, candy, and a visit from Santa. **Grand Cascapedia** brought in Christmas cards and small gifts to be sent to the local elderly citizens and shut-ins. **Lennoxville** held a very successful pre-Christmas supper and bazaar. This has been, for a number of years, a popular Yuletide event of this area.

Black Cape held an enjoyable meeting on an evening when electricity had been cut off due to a snow storm, but the hostess was able to use her wood furnace. The members brought in gaily decorated baskets with gifts for each person in the St. Jules Senior Citizens Home. **Howick** branch held their December meeting at Walshaven Senior Citizens Home in Ormstown, where luncheon was served. The meal had been prepared by a group from Montreal using their products which were advertised but not sold at the gathering. The gay Christmas decorations, made by the ladies of Walshaven, gave the room a festive air. Some members brought in homemade Yuletide decorations to display. Christmas plates of home-cooking were prepared for shut-ins. Everyone agreed that the day had been most enjoyable and profitable.

This month generous donations were reported: **Aubrey-Riverfield** gave to the Chateaugay Valley Mentally Retarded Association. This gift was presented at their Christmas party on December 23. A quilt was also "tacked" for a needy family and taken to C.V.R.

Pioneer gave to CJAD Christmas Basket Fund and to WI Northern Extension Fund, **Jerusalem-Bethany**

and **Frontier** to Rosemere Home, **Inverness** and **Kinnear's Mills** to Senior Citizen's Home in Kinnear's Mills and Inverness to Oddfellows Hall, **Waterloo-Warden** to Courville Hospital. **Abbotsford** brought gifts for needy children to be distributed by the Boy Scouts and **Belvidere** voted money to buy flashlights and Christmas gifts for cancer patients. **Fordyce** sent money to the Tiny Tim Fund of the Montreal Children's Hospital and to the Heroes Memorial Elementary School Fund for needy children. **Stanbridge East** gave money for toys and other suitable gifts for retarded children's home in Bedford. **Cowansville** to the District of Bedford Resource Centre to assist in the much needed equipment for children with learning disabilities. **Waterloo-Warden** to Courville Hospital and to the nursing home. **Granby Hill** to a patient in the Douglas Hospital and **Granby West** to their Senior Citizen's Home.

Another highlight from Missisquoi. **Fordyce** celebrated their 30th Anniversary. When the minutes of the first meeting of this branch were read, it was noted that many of the first members are still members.

I noticed this article in the Sherbrooke Record. At the annual meeting of the Quebec Farmer's Association, held at Macdonald College, the chairman said their new members had come into the Q.F.A. through the Q.F.A. and the Women's Institutes who had booths together at the Ploughing Match held at the College. It is an interesting statement.

Some good specials have come in, and we are looking forward to receiving more. One motto seemed outstanding. "The best gifts are tied with heart strings (**Stanbridge East**).

Mrs. Gladys C. Nugent
QWI Publicity Convener

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Photo: the late R. R. Sallows, Goderich



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